1125-34-3114 **Stephen M Steward*** (stewards2@winthrop.edu), 416 Mariah St., Fort Mill, SC 29715, and **Joshua B Dasburg**. *Incorporating the Cancer Stem Cell Hypothesis into a Treatment Model of Glioblastoma Multiforme.* Preliminary report.

In this talk, we extend the work of Kronik, Kogan, Vainstein, and Agur (2008) by incorporating the cancer stem cell hypothesis into a treatment model for Glioblastoma Multiforme. Cancer Stem Cells (CSCs) are a specialized form of tumor cell with normal adult stem cell properties. CSCs are believed to be one of the primary reasons for cancer recurrence since they are more resilient to current treatment practices and are able to repopulate the tumor once their own population has regenerated. We present a system of nonlinear ordinary differential equations that describes the interaction between cancer stem cells, tumor cells, and alloreactive cytotoxic T-lymphocytes (CTLs). Under the assumption of constant treatment, we present sufficient conditions for a treatment threshold that ensures a cure state that is globally asymptotically stable. We also explore a more biologically accurate treatment schedule in which CTLs are injected periodically. We consider cases where treatment is applied continuously over varying time intervals, as well as treatment injections using the Dirac Delta function. We conclude with a discussion of biological implications. (Received September 21, 2016)